

## PATENT SPECIFICATION

(11) 1 555 031  
AP3 Rec'd PCT/PTO 08 JUN 2006

1 555 031

- (21) Application No. 20151/76 (22) Filed 15 May 1976  
 (23) Complete Specification filed 8 Aug. 1977  
 (44) Complete Specification published 7 Nov. 1979  
 (51) INT. CL.<sup>3</sup> A47J 45/06  
 (52) Index at acceptance  
 A4A 4D  
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## (54) IMPROVEMENTS IN AND RELATING TO HANDLES

(71) We, L.S.D. WOODTURNING, an unlimited liability Company, re-registered under the Companies Act 1967, of Trent Lane, Castle Donington, Derbyshire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 The invention relates generally to handles and to means of securing handles to vessels in the nature of pots, pans and the like.

Conventionally handles are attached to pans by means of bolts passing through the 15 centre of the handle or through projecting lugs on the handle and engaged with suitable threaded sockets secured to the pan. These arrangements suffer from the disadvantage that a separate tool is required to tighten 20 the handle in the event that it becomes loose and the bolts or studs detract from the appearance of the handle.

It is an object of the present invention to obviate or mitigate these disadvantages.

25 The invention provides a pan or like handle, having a threaded stud projecting from the end thereof which is to be attached to the pan, the stud having an anchoring portion which is screwed into the body of 30 the handle, the pitch of the thread on the projecting portion being less than that on the anchoring portion and both threads being of the same hand.

Preferably the thread on the projecting 35 portion of the stud corresponds to accepted metal thread standards and the thread on the anchoring portion corresponds to conventional wood screw standards.

Preferably the portion of the pan which 40 abuts the end of the handle is provided with an annular series of projections adapted to bite into the handle to prevent rotation of the handle in a direction tending to unscrew it from the pan. The projections are preferably 45 of a cross-section which facilitates rota-

tion of the handle relative to the pan in a direction to tighten the handle but resists rotation in the opposite direction.

The handle is preferably secured to the pan by means of an intermediate member 50 which is clamped between the handle and the pan and which is provided with said projections. The invention also provides a pan or like vessel fitted with a handle as aforesaid.

55 An embodiment of the invention will now be described by way of example, with reference to the accompanying diagrammatic drawings in which:

Fig. 1 is a horizontal cross-section through 60 a pan handle according to the invention;

Fig. 2 is a view similar to Fig. 1 of a modification; and

Fig. 3 is an anti-rotation device for the 65 modification shown in Fig. 2.

Referring to the drawing, the handle is formed from wood and comprises a body portion 5 the end of which adjacent to the pan 6 is provided with a projection 7 of reduced diameter forming a shoulder over 70 which a metal flame guard 8 engages. An internally threaded socket 9 is welded to the pan 6 and passes through the flame guard 8 for engagement with a stud 10 fitted to the adjacent end of the handle. The socket 75 9 is of non-circular external cross-section, e.g. hexagonal and passes through a hole 8A of complementary cross-section in the flame guard 8 whereby to prevent rotation of the latter when the handle is tightened. 80

The stud 10 comprises a projecting portion 10A having a screw thread formed thereon which corresponds to accepted metal thread standards, and an anchoring portion 10B having a thread formed thereon which 85 is of greater pitch that is has less turns per inch than the thread on the portion 10A and which corresponds to conventional wood screw standards. The anchoring portion of the stud is secured in the body por- 90

tion 5 of the handle prior to fitting of the handle to the pan and the projecting portion 10A is then engaged with the socket 9 and the handle rotated to draw it into contact 5 with the game guard 8 and thereby secure the handle to the pan. The threads formed on the portions 10A and 10B of the stud 10 are of the same hand so that rotation of the handle 5 in a direction to tighten it 10 serves to screw the projecting portion 10A into the socket 9 and also tends to tighten the engagement between the anchoring portion 10B of the stud and the handle.

The outer edge of the flame guard 8 is 15 provided with an annular series of radially directed teeth 11 which bite into the co-operating shoulder portion of the handle 5. The teeth are of saw-tooth section with their sloping faces disposed so as to facilitate 20 rotation of the handle relative to the flame guard in a direction tending to tighten the handle, but resist rotation in a direction tending to slacken the handle.

In fitting the stud 10 to the handle 5 it 25 is important to ensure that a substantial frictional force is generated between the two. For this purpose a hole is pre-drilled in the handle 5 of a diameter corresponding to that of the barrel of the anchoring portion 30 10B of the stud. The stud is then screwed into this hole with the result that the material of the handle contacts the portions of the barrel which are exposed between the threads and thereby provides a substantial 35 area of surface contact between the stud and the handle generating a high frictional force resisting withdrawal of the stud.

It will be appreciated that rotation of the handle in a direction to tighten it tends 40 not only to screw the portion 10A of the stud into the socket 9 and tighten the engagement between the anchoring portion 10B of the stud and the handle, but also results in the handle riding over the projections 11 on the flame guard 8 which bite 45 into the material of the handle in the adjusted tightened position. Tightening of the handle thus tends to rigidify the entire structure and secure the handle firmly to the 50 pan. The arrangement described also has the advantage that no tools are required to effect tightening and the stud 10 is wholly enclosed and hidden from view.

It is envisaged that the handle would normally be made from wood though it could 55 in some instances be made from plastics material. In this case it is envisaged that the anchoring portion 10B of the stud would be screwed into the handle after moulding 60 of same but while the plastics material was still relatively soft.

A modification of the invention is shown in Figs. 2 and 3 where an anti-rotation device 12 is shown. The device 12 comprises 65 a U-shaped member of for example, spring

steel the cross-piece 13 of which has a hole 14 through which socket 9 may pass so that the plate-like uprights 15 of the device lie alongside but at an angle to the projection 7. The angle of the uprights 15 is such 70 that rotation of the handle 5 to tighten the handle is not hindered, but on rotation of the handle 5 to slacken it the edges of the uprights 15 bite into the projection and interior wall of the flame guard 8 to prevent 75 further rotation.

In a further modification not illustrated a diaphragm washer is interposed between the end of the projection 7 and the partition in the flame guard 8, the washer, which may 80 be flat or helical is split and its ends are bent at an angle of less than 90° to the plane of the washer, the angle being such that rotation of the handle 5 to tighten it is not prevented but rotation to slacken it 85 causes the projections from the washer to bite into the end of the projection 7 and the flame guard partition to prevent further rotation in this direction.

Various other modifications may be made 90 without departing from the invention. For example, the handle could be fitted to the pan by means other than the intermediate flame guard described. In one such case the flame guard would be dispensed with 95 and the teeth 11 could be formed directly on the pot or on a ring fixed to the pot. Protection of the handle from flame could be provided by a metal ferrule fitted around the inner end of the handle which would 100 be substantially flat-faced, that is, the projection 7 illustrated in the drawings would be dispensed with and the recess in the inner end of the handle would be extended inwardly. 105

Furthermore, handles according to the present invention could be fitted to articles other than pans.

#### WHAT WE CLAIM IS:—

1. A pan or like handle, having a 110 threaded stud projecting from the end thereof which is to be attached to the pan, the stud having an anchoring portion which is screwed into the body of the handle, the pitch of the thread on the projecting portion 115 being less than that on the anchoring portion and both threads being of the same hand.

2. A handle as claimed in claim 1, in which the thread on the projecting portion 120 of the stud corresponds to accepted metal thread standards and the thread on the anchoring portion corresponds to conventional wood screw standards.

3. A handle as claimed in claim 1 or 2, 125 including an intermediate member arranged at the end of the handle and adapted to abut the pan.

4. A handle as claimed in claim 3, in which said intermediate member is provided 130

with an annular series of projections adapted to bite into the handle to prevent rotation of the handle in a direction tending to unscrew it from the pan.

5 5. A handle as claimed in claim 4, in which the projections are of a cross-section which facilitates rotation of the handle relative to the pan in a direction to tighten the handle but resists rotation in the opposite direction.

10 6. A handle as claimed in claim 3, in which an anti-rotation device is fitted between said handle and said intermediate member to co-act therewith and permit relative rotation therebetween in one direction only.

15 7. A handle as claimed in claim 6, in which said anti-rotation device includes at least one plate-like member arranged between said handle and intermediate member laterally thereof at an angle to a radius thereof.

20 8. A handle as claimed in claim 6, in which said anti-rotation device includes at least one washer-like member arranged between said handle and intermediate member between the facing end faces thereof at an angle to the planes of said faces.

25 9. A handle as claimed in any one of claims 3 to 8, in which said intermediate member includes a through passage of non-circular cross-section adapted to be fitted over a projection from the pan having a complementary cross-section.

30 10. A handle as claimed in claim 9, in which said non-circular cross-section is hexagonal.

11. A pan or like vessel having a handle as claimed in claim 1 or claim 2.

12. A pan as claimed in claim 11, in which the portion of the pan which abuts the end of the handle is provided with an annular series of projections adapted to bite into the handle to prevent rotation of the handle in a direction tending to unscrew it from the pan.

13. A pan as claimed in claim 12, in which the projections are of a cross-section which facilitates rotation of the handle relative to the pan in a direction to tighten the handle but resists rotation in the opposite direction.

14. A pan as claimed in claim 13, in which an anti-rotation device is fitted between said handle and said pan to co-act therewith and permit relative rotation therebetween in one direction only.

15. A pan as claimed in claim 14, in which said anti-rotation device includes at least one plate-like member arranged between said handle and pan laterally thereof at an angle to a radius thereof.

16. A pan as claimed in claim 14, in which said anti-rotation device includes at least one washer-like member arranged between said handle and pan between the facing end faces thereof at an angle to the planes of said faces.

17. A handle substantially as hereinbefore described with reference to the accompanying drawings.

18. A pan or like vessel including a handle substantially as hereinbefore described.

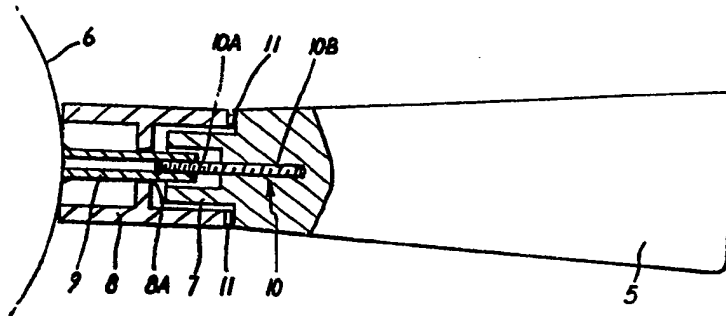
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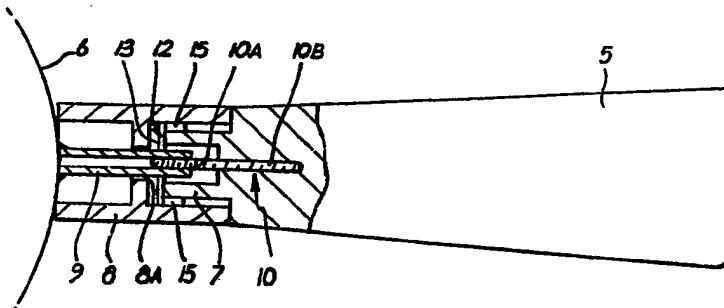
COMPLETE SPECIFICATION

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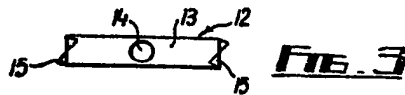
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**FIG. 1**



**FIG. 2**



**FIG. 3**